REMARKS

This reply is submitted in response to the Office Action dated November 28, 2006. The amendments above and the remarks that follow address the points raised in the Office Action and, thereby are believed to place this application in condition for allowance.

Allowable Claims

Applicants thank the Examiner for the indication of allowability of claim 6, 8-10, 16, 18-20, and 25-27 if these claims are rewritten in independent format and can overcome the §101 rejections.

Applicants have chosen to amend claim 9 to include the features of its base claims, and thus claim 9, and claim 10 which depends therefrom, are now believed in be in condition for allowance.

Applicants note that the Examiner has indicated that claim 11 is also allowable. However, in section regarding Claim Rejections on page 8, claim 11 is rejected under 35 U.S.C. §103. Accordingly, Applicants assume that the indication of allowability of claim 11 is a typographical error, and that claim 11 stands rejected over cited art.

Claim Objections

Claims 1-29 are objected to because of a number of informalities, specifically in claims 1, 5, 9, and 11. The informalities noted by the Examiner in claims 1, 5, 9, and 11 have been corrected in the amendments to the claims, as noted above.

Claim Rejections under 35 U.S.C. §101

Claims 1-29 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Without acquiescing to the rejections, independent claim 1 is amended to include a second processing element that accesses the R-matrix from contiguous locations within the first memory and generates estimates of symbols transmitted by the users as a composition of the R-matrix. As such, claim 1 provides a useful, tangible, and concrete result, namely, the generation of estimates of symbols transmitted by the users.

With regard to determining whether a claim satisfies the statutory utility requirement, MPEP 2106(IV)(C)(2)((2)) states

> ...USPTO personnel shall review the claim to determine it produces a useful, tangible, and concrete result. In making this determination, the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather on whether the final result achieved by the claimed invention is "useful, tangible, and concrete."

Accordingly, independent claim 1 satisfies the utility requirement of §101. Similar reasoning applies to establish that independent claims 9, 11, and 21 also satisfy the utility requirement, as each of these claims recites generating estimates of symbols transmitted by the users.

Claim Rejections under 35 U.S.C. §103

Claims 1, 2, and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,161,209 of Moher.

Claim 1 is directed to a communications device for detecting user transmitted symbols encoded in spread spectrum waveforms (hereinafter "user waveforms"). As amended, claim 1 recites a first memory, and a set of one or more first processing elements that are coupled to the first memory. The set of first processing elements generates a matrix (hereinafter "R-matrix") representative of cross correlations among user waveforms and stores the R-matrix to *contiguous locations within the first memory*. The device also includes a second processing element coupled with the first memory. The second processing element accesses the R-matrix from the contiguous locations within the first memory and generates estimates of the transmitted symbols as a composition of the R-matrix.

Moher is generally directed to a method for processing multiple signal samples over a single transmission line to reduce interference between the samples. It does not, however, teach a set of processing elements that generate an R-matrix and store that matrix into *contiguous locations* within a memory. Nonetheless, the Examiner states that "...it would have been obvious to a person skilled in the art to use a memory (for example a computer) to store the R-matrix (the matrix shown in

column 44, equation (129)) so that the R-matrix is easily accessible for further processing or just stored for future reference." In response, Applicants note that claim 1 recites not only storing the R-matrix to the first memory but also requires that such storage be done in a specific way, namely, storing the matrix to *contiguous locations* within the first memory. Such a feature is neither taught nor suggested by Moher. Applicants explain that storing the R-matrix to contiguous locations in the memory provides a number of advantages, such as "increasing throughput via simply incrementing memory pointers rather than using a random access approach" (see page 52 of the specification).

Further, claim 1 recites that one or more processing elements generate the R-matrix and store the matrix to memory, and another processing element accesses the R-matrix from the memory and calculates the estimates of the transmitted symbols. In other words, the tasks of generating an R-matrix and determining symbol estimates based on that matrix are divided between at least two different processing elements, one of which generates data for use by the other and stores that data in contiguous memory locations. Moher fails to teach or suggest such features.

Thus, claim 1 distinguishes patentably over Moher.

The arguments above apply with equal force to establish that claim 21 is also patentable over Moher. For example, similar to claim 1, claim 21 recites a set of one or more first processing elements coupled to a first memory that generate an R-matrix and store that R-matrix in contiguous locations within the first memory, and a second processing element coupled to the first memory that accesses the R-matrix from those contiguous locations within the first memory and generates symbol estimates as a composition of the R-matrix. Thus, claim 21 also distinguishes patentably over Moher.

Claims 3, 4, 7, 22, 23, and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,161,209 of Moher in view of U.S. Patent No. 6,816,541 of Schmidl.

Claims 3, 4, and 7 depend from independent claim 1, and claims 22, 23, and 26 depend from independent claim 21, and hence include all their features respectively. As discussed above, claims 1 and 21 are patentable over Moher. Schmidl does not remedy the deficiencies of Moher to render the claimed subject matter obvious. Schmidl is generally direct to spread spectrum communications

systems that employ iterative parallel interference estimates for signals received from multiple coded sources. In some modes, it generates a matrix R, which is indicative of cross correlations between the chip sequences of different fingers of different users. Schmidl does not, however, teach, a set of first processing elements storing that matrix into contiguous memory locations to be used by a second processing element. Thus, claims 3, 4, 7, 22, 23, and 26, which depend from claims 1 and 21, are patentable over the combined references.

Claims 5 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,161,209 of Moher in view of U.S. Patent No. 6,816,541 of Schmidl and in view of U.S. Patent No. 7,028,114 of Milan.

Claim 5 depends from claim 1, and claim 24 depends from claim 21, and hence include all their features respectively. As discussed above, claims 1 and 21 are patentable over Moher. Schmidl and Milan do not remedy the deficiencies of Moher. Milan is generally directed to a wireless hub that is used to connect multiple remote peripheral devices to a computer. However, Milan does not teach a first processor storing a matrix into contiguous memory locations to be used by a second processor. Thus, claims 5 and 24, which depend from claims 1 and 21, are patentable over the combined references.

Claims 11, 12, 28, and 29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,161,209 of Moher in view of "DMA Fundamentals on Various PC Platforms" of Harvey.

The arguments above with respect to claim 1 apply with equal force to establish that independent claim 11 is patentable over Moher. For example, claim 11 also recites first and second processing elements, and that the second processing element accesses the R-matrix from contiguous locations within the first memory and generates symbol estimates as a composition of the R-matrix. "DMA Fundamentals on Various PC Platforms" does not remedy the deficiencies of Moher as this reference merely teaches the basics of a DMA controller. It does not, however, teach a set of one or more first processing elements storing a matrix into contiguous memory locations to be used by a second processing element. Thus, claim 11, and claim 12 which depends therefrom, distinguishes over the combined references.

Claims 28 and 29 depend from claim 21, and hence include all their features respectively. As discussed above, Moher does not teach or suggest salient features of claim 21, and "DMA Fundamentals on Various PC Platforms" does not remedy the deficiencies of Moher to render obvious the claimed subject matter. Thus, claims 28 and 29, which depend from claim 21, are patentable over the combined references.

Claims 13, 14, and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,161,209 of Moher in view of "DMA Fundamentals on Various PC Platforms" of Harvey in view of U.S. Patent No. 6,816,541 of Schmidl.

Claims 13, 14, and 17 depend from claim 11, and hence include its features. As discussed above, claim 11 is patentable over Moher and "DMA Fundamentals on Various PC Platforms." Further, Schmidl does not teach or suggest salient features of claim 11: storage of an R matrix in contiguous locations in memory to be accessed by a second processing element for determining symbol estimates. Thus, claims 13, 14, and 17, which depend from claim 11, are patentable over the combined references.

Conclusion

In view of the above amendments and remarks, Applicant respectfully submits that the claimed invention is patentable. Applicant therefore kindly requests reconsideration and allowance of the pending application.

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Respectfully submitted,

By____________________

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